

In Situ Aerosol Detector, Phase I

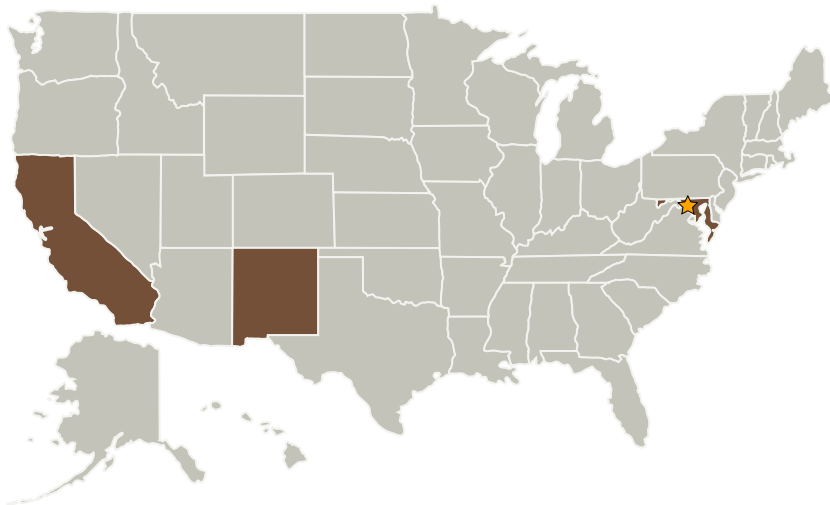
Completed Technology Project (2009 - 2009)



Project Introduction

NASA is developing new platform systems that have the potential to benefit Earth science research activities, which include in situ instruments for atmospheric measurements for use on radiosondes, dropsondes, tethered balloons, kites, and unmanned aerial vehicles (UAVs). Aerosols influence global climate and human health and can affect local and regional weather processes. Despite of their importance, aerosols are the least-understood components of the climate system. There is a need in instrumentation capable of measuring the size distributions of aerosol particles and vertical distributions of aerosols in the atmosphere. Vista Photonics in collaboration with New Jersey Institute of Technology proposes an innovative and inexpensive, although rugged, self-contained, and intelligent optical aerosol measurement technology. The Phase I study will demonstrate the feasibility of the proposed technology and outline the design of the Phase II prototype instrument. The successful completion of this program will lead to a compact aerosol measurement instrument that can be used for UAV-, balloon-, radiosonde-, and dropsonde-based in situ measurements of aerosol size distribution, concentration, and aerosol vertical distribution in the atmosphere.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Vista Photonics, Inc.	Supporting Organization	Industry	Santa Fe, New Mexico

Primary U.S. Work Locations	
California	Maryland
New Mexico	

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX14 Thermal Management Systems
 - └ TX14.2 Thermal Control Components and Systems
 - └ TX14.2.8 Measurement and Control